

On page 5, line 8, after "muffler 208.", add -- Perforations 213

91 provide for communication from the contaminated soil into the conduits.--

On page 5, line 17, before "at each end", insert --or--.

In the Drawings:

✓ Replace the drawing sheet with the enclosed sheet.

REMARKS

Claims 1-9 remain in the present application. Drawings stand as objected to, and the claims stand as rejected under 35 U.S.C. § 112, first paragraph. The above amendment changes the reference to FIGS. 1 and 2 to make it clear that different embodiments are shown. The above amendment replaces the drawing sheet with a sheet that includes perforations in the conduits. Support is found in FIG. 1, where perforations are shown in the conduits, and in the specification and claims, where perforations are described as providing communication between the contaminated soil and the volume defined by the conduits. The specification is amended to reference the perforations added in FIG. 2, to make reference to the figures clear that the figures are different embodiments, and to correct typographical errors and to make reference to an oxidizer consistent. None of these amendments added new matter.

2 The invention of the present application is a method for remediation of contaminated earth. The method includes placing horizontal conduits in the vicinity of the contaminated soil, heating the contaminated soil from the horizontal conduits by passing combustion gasses through the horizontal conduits and the combustion gasses are not injected into the soil. Contaminants are vaporized by the heat, and vaporized contaminants are withdrawn through horizontal conduits. In a preferred embodiment, combustion gasses are passed through perforated conduits, and the vaporized contaminants are drawn through the same perforated conduits. The present invention takes advantage of the cost effectiveness of gas combustion and, by heating conductively from the source of vacuum, maintains a pressure in the contaminated zone that is less than atmospheric pressure and prevents spreading contaminants away from the originally contaminated soil.

The objection to the drawings is respectfully traversed. The objections are said to be because "1), the drawings do not clearly show Applicants invention in such manner as to be clear as to what is being disclosed, 2), numerous embodiments or alternate embodiments are described in the specification which are not shown in the drawings, and 3) Figure 2 appears to be incomplete in that only a portion of the device appears to be shown." As is discussed below, applicant believes that the invention, which is a very simple invention, is readily apparent from the specification and figures as submitted. The third basis for the rejection appears to be that all of the elements of the second embodiment are not shown in FIG. 2. The basis in law for this objection is not apparent. Applicant knows of no requirement that each element needs to be shown in each figure, and surely for a complex invention, this would seem to be an unworkable requirement. The second basis, that embodiments are discussed and not shown in drawings is also without basis in law. Although the USPTO has interpreted 37 C.F.R. § 1.81(a) to mean that each claimed element must be shown in a figure, even this section of the C.F.R. only refers to "the subject matter sought to be patented..." A basis for requiring non-claimed subject matter to be shown in drawings is not pointed to by the Examiner, and it is respectfully requested that the Examiner point to a basis for such a requirement. The objection to the drawings is therefore respectfully traversed.

The first basis for the rejection under 35 U.S.C. § 112, first paragraph, is said to be that it is not clear whether FIG. 1 and FIG. 2 show the same embodiment or different embodiments of the invention. The Brief Description of the Figures is above amended to state the embodiments are different. This is not addition of new matter because a look at the Figures shows that they differ, and therefore that they must be different embodiments. This basis for the rejection is therefore respectfully traversed.

The next basis for the rejection mentioned is that "it is not clear how the embodiment of Figure 1 operates." The Examiner goes on to state that he can not understand how combustion gases could be passed through a perforated conduit, while the perforated conduit is maintained in a vacuum and contaminants are drawn into the perforated conduit. The claim requires that the perforated conduit be placed in the vicinity of the contaminated soil.

The Figures and the specification show that it is contemplated that the conduits be buried. Thus, even with combustion gases entering the conduit, a pressure that is less than atmospheric pressure is maintained in the perforated conduit by removing vapor from the conduit. Both the combustion gases and vaporized contaminants are drawn out of the conduits by the blower 107 (page 4, lines 6-9). The Examiner then states that "negative pressure" is not understood. A word search of the LEXIS patent data base showed 23,500 documents with "negative" adjacent to "pressure". A review of some of these documents indicates that "negative pressure" is a commonly used phrase, and is used to describe pressure levels less than atmospheric. This is exactly as the term is used in the present specification.

The Examiner then discusses FIG. 2 which shows "one half of the pattern, with a mirror image of the system shown in FIG. 2 provided at the other end of the pattern." (specification, page 5, lines 8-10). It is noted that every second conduit contains hot combustion gases going into the contaminated soil, and the others contain vaporized contaminants and combustion gases exiting the contaminated soil. In the Office action, the Examiner inquires "[d]oes this mean that the other end includes all of the systems as shown, such as 201-210?" The only meaning of "The mirror image" would seem to mean this. The basis for confusion is not clear.

The Examiner then states that "[a]lso it is not clear how the combustion gases are passed into the soil." Combustion gases, in this embodiment, are not passed through the soil, but as in the embodiment of FIG. 1, are drawn out of the conduits with vaporized contaminants.

The Examiner then points out that perforations are not shown in the conduits of FIG. 2. The replacement drawing sheet includes these perforations and the specification is amended to provide reference to these. Applicant also points out that no basis is provided for requiring such an addition to the drawings or specification, because each element is not required to be shown in each figure.

The Examiner then requires that material be removed from the specification. This material is not specifically claimed, and therefore basis for a requirement that they be shown in drawings is not stated.

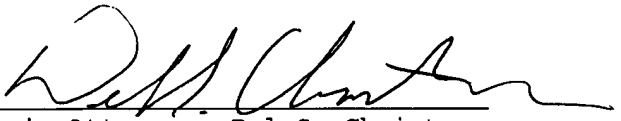
The Examiner then points out a typographical error and an inconsistent reference to the oxidizer. These are corrected by the above amendment.

The basis stated for the rejection under 35 U.S.C. § 112, first paragraph, are each addressed above and are each respectfully traversed. Withdrawal of this rejection and allowance of the claims is respectfully requested.

Respectfully submitted,

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Enclosure: replacement drawing sheet

